

# The New 8<sup>th</sup> Edition of Karlsruhe Chart of Nuclides: Description and Strategy

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**Our mission is to maintain, develop and update the Karlsruhe Nuclide Chart with the latest, concise information on all experimentally observed nuclides.**


New machine developments and improvements at major nuclear centres worldwide are the main source of discovery of new elements, isotopes and new experimental results. Based on this very active area of research and continuous generation of new data, a strategy is required to keep the Chart up to date. The main steps in this strategy are described in this poster. They cover:

- Compare and update the KNC with the latest evaluated data from the Nuclear Data Sheets
- Check the online database XUNDL and the Nuclear Science References for the latest published information and (unevaluated) data
- Check and compare individual scientific publications.

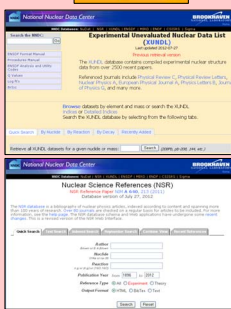
### Sources

#### Isotopic data

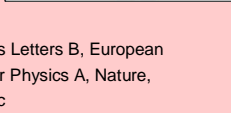
**Nuclear Data Sheets**  
Evaluated nuclear structure and decay data



**XUNDL Database**  
Experimental unevaluated nuclear data list



**Nuclear Science References**  
Bibliography of nuclear physics articles



**Scientific Journals**  
Physical Review C, Physics Letters B, European Physical Journal A, Nuclear Physics A, Nature, Physical Review Letters etc

#### Additional data

**Physical constants:** CODATA Recommended Values 2012

**Atomic Weights:** Wieser et al, Atomic weights of the elements 2009 (IUPAC Technical Report)

**Abundances:** Berglund et al. Isotopic composition of elements 2009

**Cross Sections:** Holden: Neutron Scattering and Absorption Properties, Handbook of Chemistry and Physics 2010

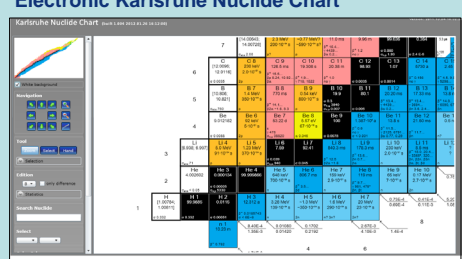
**Thermal Fission Yields:** IAEA Report Handbook of Nuclear Data for Safeguards 2008 and JEFF 3.1 Nuclear Data Library 2006

**Element Properties:** Handbook of Chemistry and Physics 2010

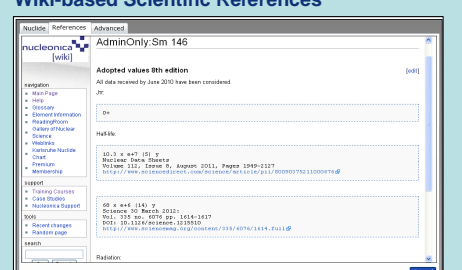
**IUPAC Periodic Table**

### Update Tools

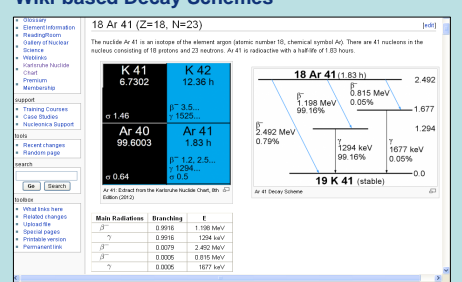
#### Electronic Karlsruhe Nuclide Chart



#### Wiki-based Scientific References



#### Wiki-based Decay Schemes

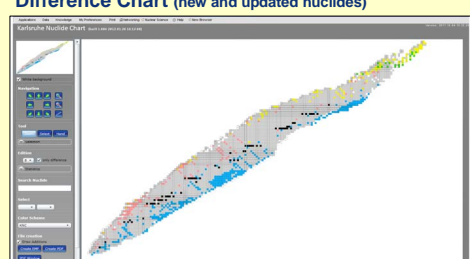


#### Further information

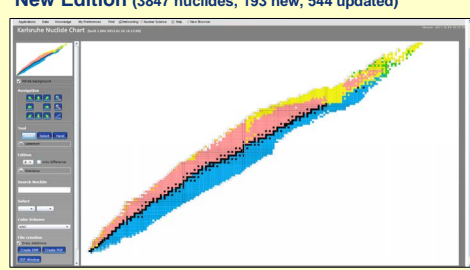
<http://www.KarlsruheNuclideChart.net>  
<http://www.nucleonica.com>

### Final Products


#### Difference Chart (new and updated nuclides)



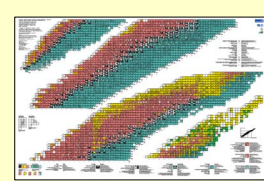
#### New Edition (3847 nuclides, 193 new, 544 updated)



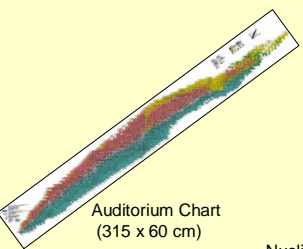
#### KNC Paper versions




Fold-out-Chart



Wall-Chart



Auditorium Chart (315 x 60 cm)



Nuclide Carpet (6.5 x 1 m)